**Antimycobacterial Drugs**

🚑 First line drugs for TB

1. Isoniazid: used as part of drug combination therapy or prophylactically. Decreases the production of mycolic acid (immune response activator in Tb). Narrow antibacterial spectrum against *M.tuberculosis, M.kansasii.* Widely distributed throughout system including the CNS. Metabolism is determined by individuals’ rates of acetylation with KatG. **Side RX: neuritis (administer vitB6), hepatitis (rare and under the age of 35), hypersensitivity**
2. Rifampin: broader spectrum than isoniazid; widely distributed throughout the system including the CNS. DNA dep RNA pol inhibitor. **Side RX: hepatotoxicity, hypersensitivity, orange body fluids, increased cytP450**
   1. **Rifabutin: substitute for AIDS patients as it causes less induction of cytP450**
   2. **Rifapentine: longer half-life and given 2x weekly**
3. Pyrazinamide: nicotinamide like isoniazid. Widely distributed, requires an acidic environment, only active against intracellular mycobacteria. **Side RX: urate retention possibly leading to gout. ALSO, liver damage occurs at slightly higher doses than the therapeutic dose.**
4. Ethambutol: mostly just *M.tuberculosis* and a few atypical mycobacteria. Not as widely distributed and not as potent. Does NOT enter CNS but does cross inflamed meninges. **Side RX: optic neuritis and urate retention possibly leading to gout**

🚑 Other categories for TB

1. Injectable agents: Kanamycin, amikacin, capreomycin, streptomycin
2. Flouroquinolones: Levofloxacin, moxifloxacin, ofloxacin
3. Oral bacteriostatic drugs (2nd line drugs): ethionamide, cycloserine, PAS, Prothionamide,
4. Other drugs of unknown mechanism

NOTE: Drug resistant TB is defined as mono-resistant (only one drug), poly-resistant (more than one drug but not both isoniazid and rifampin), multidrug-resistant (at least rifampin and isoniazid), extensively drug-resistant (MDR plus fluorquinolones and atleast one of the three injectable drugs)

🚑 MAC treatment

* Mycobacterium avium complex respiratory infection is a serious issue for AIDS patients and treated with macrolides (clarithromycin or azithromycin) as well as ethambutol or rifabutin.

🚑 Leprosy

1. Dapsone: pteride synthase inhibitor (like sulfonamides). **Side RX: methemoglobinuria and hemolytic anemia**
2. Rifampin: see above
3. Clofazimine: used when first two fail.